

Application No.: 10/804,823

Docket No.: JCLA13060

In the Claims

1. (currently amended) A tungsten-inert-gas (TIG) welding equipment, comprising:
an electrode, for generating an electric arc between itself and a welded object;
a tubular inner nozzle, disposed surrounding the electrode; and
a tubular outer nozzle, disposed surrounding the inner nozzle, wherein
a first shielding gas comprising an inert gas ~~can be~~ is supplied from the inner nozzle, and
a second shielding gas containing an oxidative gas ~~can be~~ is supplied from between the inner
nozzle and the outer nozzle, and a concentration of the oxidative gas in the second shielding
gas ranges from 2000 vol. ppm to 6000 vol. ppm.

2. (currently amended) A TIG welding equipment, comprising:
an electrode, for generating an electric arc between itself and a welded object;
a tubular central nozzle, disposed surrounding the electrode; and
a plurality of side nozzles, disposed at least on two sides of the electrode as viewed in a
welding direction, wherein
a first shielding gas comprising an inert gas ~~can be~~ is supplied from the central nozzle,
and a second shielding gas containing an oxidative gas ~~can be~~ is supplied from the side
nozzles, and a concentration of the oxidative gas in the second shielding gas ranges from 2000
vol. ppm to 6000 vol. ppm.

3. (previously presented) A TIG welding method, comprising:
generating an electric arc between an electrode and an object to weld the object, wherein
a first shielding gas comprising an inert gas is conducted toward the welded object
surrounding the electrode and a second shielding gas containing an oxidative gas is conducted
toward the welded object along a periphery of the first shielding gas, and a concentration of

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the oxidative gas in the second shielding gas ranges from 2000 vol. ppm to 6000 vol. ppm.

4. (previously presented) A TIG welding method, comprising:

generating an electric arc between an electrode and an object to weld the object, wherein a first shielding gas comprising an inert gas is conducted toward the welded object surrounding the electrode and a second shielding gas containing an oxidative gas is conducted toward the welded object from at least two sides of the electrodes as viewed in a welding direction, and a concentration of the oxidative gas in the second shielding gas ranges from 2000 vol. ppm to 6000 vol. ppm.

Claims 5-6: (canceled).

7. (previously presented) The TIG welding method of claim 3, wherein the concentration of the oxidative gas in the second shielding gas ranges from 3000 vol. ppm to 5000 vol. ppm.

8. (previously presented) The TIG welding method of claim 4, wherein the concentration of the oxidative gas in the second shielding gas ranges from 3000 vol. ppm to 5000 vol. ppm.

9. (previously presented) The TIG welding method of claim 3, wherein the concentration of the oxidative gas in the second shielding gas is set so that an oxygen concentration in a welded metal portion of the welded object ranges from 70 wt. ppm to 220 wt. ppm.

10. (previously presented) The TIG welding method of claim 4, wherein the concentration of the oxidative gas in the second shielding gas is set so that an oxygen concentration in a welded metal portion of the welded object ranges from 70 wt. ppm to 220 wt. ppm.

11. (previously presented) The TIG welding method of claim 3, wherein an oxide coating formed on a surface of a welded metal portion of the welded object has a thickness of 20 μm or less.

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12. (previously presented) The TIG welding method of claim 4, wherein an oxide coating formed on a surface of a welded metal portion of the welded object has a thickness of $20\mu\text{m}$ or less.

13. (original) The TIG welding method of claim 7, wherein an oxide coating formed on a surface of a welded metal portion of the welded object has a thickness of $20\mu\text{m}$ or less.

14. (original) The TIG welding method of claim 8, wherein an oxide coating formed on a surface of a welded metal portion of the welded object has a thickness of $20\mu\text{m}$ or less.

15. (original) The TIG welding method of claim 9, wherein an oxide coating formed on a surface of the welded metal portion has a thickness of $20\mu\text{m}$ or less.

16. (original) The TIG welding method of claim 10, wherein an oxide coating formed on a surface of the welded metal portion has a thickness of $20\mu\text{m}$ or less.

17. (currently amended) The TIG welding equipment of claim 1, wherein a tip of the electrode tubular inner nozzle is more protrudent than a tip of the tubular-~~inner~~ outer nozzle in a tip direction of the electrode tubular inner nozzle and the tubular-~~inner~~ outer nozzle.

18. (previously presented) The TIG welding equipment of claim 2, wherein tips of the side nozzles are more protrudent than a tip of the tubular central nozzle in a tip direction of the side nozzles and the tubular central nozzle.